THAT CLAIMED IS:

1. A power generation system comprising:

a rotor; and

a stator positioned adjacent the rotor, the stator including a plurality of high voltage stator coils, each of the plurality of stator coils including a plurality of metal coil strands, a plurality of metal vent members positioned adjacent to the plurality of coil strands, and compact voltage grading means contacting each of the plurality of vent members for grading voltage between the plurality of vent members and the plurality of metal coil strands to thereby prevent an overvoltage condition.

2. A system as defined in Claim 1, wherein the compact voltage grading means includes at least a first conductive strip member contacting a conductive portion of each of the plurality of vent members, a voltage grading layer of material positioned to contact the first conductive strip member, and at least a second conductive strip member positioned to contact the plurality of metal coil strands and the voltage grading layer to thereby provide an electrical flow path between the metal vent members and the metal coil strands.

3. A system as defined in Claim 2, wherein the voltage grading layer includes a plurality of layers of conductive tape, the plurality of layers including a first layer of conductive tape positioned to adhere to each of the plurality of vent members and the first conductive strip member, and a second layer of conductive tape positioned to adhere to the plurality of vent members and the second conductive strip member.

4. A system as defined in Claim 2, wherein the compact voltage grading means further includes conductive filler material positioned to contact

surfaces of the plurality of coil strands, the first and second strip members, and the voltage grading layer to enhance decreasing of a voltage potential between the plurality of metal strands and the plurality of metal vent members.

5. A system as defined in Claim 4, wherein each of the stator coils further includes bonding filler material positioned to contact the conductive filler material of the compact voltage grading means to bond the compact voltage grading means to the plurality of stator coils.

6. A system as defined in Claim 5, wherein each of the plurality of vent members has tubular shape and are positioned in a stacked relationship, and wherein the plurality of metal coil strands are positioned on each side of the stack of tubular-shaped metal vent members.

7. A high voltage stator coil for a stator of a power generation system, the stator comprising:

a plurality of metal strands;

a plurality of vent members positioned adjacent the plurality of metal strands; and

compact voltage grading means contacting each of the plurality of vent members and the plurality of metal strands for grading voltage between the vent members and the metal strands to thereby prevent an overvoltage condition.

8. A stator coil as defined in Claim 7, wherein the compact voltage grading means includes at least a first conductive strip member contacting a conductive portion of each of the plurality of vent members, a voltage grading layer of material positioned to contact the first conductive strip member, and at least a second conductive strip member positioned to contact the

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plurality of metal strands and the voltage grading layer to thereby provide an electrical flow path between the vent members and the metal strands.

9. A stator coil as defined in Claim 8, wherein the voltage grading layer includes a plurality of layers of conductive tape, the plurality of layers including a first layer of conductive tape positioned to adhere to each of the plurality of vent members and the first conductive strip member, and a second layer of conductive tape positioned to adhere to the plurality of vent members and the second conductive strip member.

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10. A stator coil as defined in Claim 9, wherein the compact voltage grading means further includes conductive filler material positioned to contact surfaces of the plurality of coil strands, the first and second strip members, and the voltage grading layer to enhance decreasing of a voltage potential between the plurality of metal strands and the plurality of vent members.

11. A stator coil as defined in Claim 10, further comprising bonding filler material positioned to contact the conductive filler material of the compact voltage grading means to bond the compact voltage grading means.

12. A stator coil as defined in Claim 11, wherein each of the plurality of vent members has tubular shape and is positioned in a stacked relationship, and wherein the plurality of metal strands are positioned on each side of the stack of tubular-shaped vent members.

13. An overvoltage protector for a power generation system, the protector comprising:

at least a first conductive strip member positioned to contact one of a plurality of vent members;

a voltage grading layer of material positioned to contact the first conductive strip member; and

at least a second conductive strip member positioned to contact the voltage grading layer and at least one of a plurality of conductive coil strands forming a portion of a high voltage coil.

14. A protector as defined in Claim 13, wherein the voltage grading layer includes a plurality of layers of conductive tape, the plurality of layers including a first layer of conductive tape positioned to adhere to each of the plurality of vent members and the first conductive strip member, and a second layer of conductive tape positioned to adhere to the plurality of vent members and the second conductive strip member.

15. A protector as defined in Claim 14, further comprising a conductive filler material positioned to contact surfaces of the plurality of coil strands, the first and second strip members, and the voltage grading layer to enhance decreasing of a voltage potential between the plurality of metal strands and the plurality of vent members.

16. A method of grading voltage between internal vent members and conductive strands of a high voltage coil of a power generation system, the method comprising:

connecting conductive portions of each of a plurality of internal vent members to a plurality of conductive strands of a high voltage coil.

17. A method as defined in Claim 16, wherein the connecting step for each vent member includes:

forming an opening in insulation surrounding the vent members;

positioning a first conductive strip member to contact conductive portions of the vent member;

positioning a voltage grading layer of material to contact and overlie the first conductive strip member; and

positioning a second conductive strip member to contact the voltage grading layer and at least one of the plurality of conductive strands.

18. A method as defined in Claim 17, wherein the voltage grading layer includes a plurality of layers of conductive tape, and wherein the step of positioning the voltage grading layer includes adhering a first layer of conductive tape to the first metal strip member and the insulation surrounding the vent member and adhering a second layer of conductive tape to the insulation and the second conductive strip member.

19. A method as defined in Claim 18, further comprising the step of positioning conductive filler material to contact the plurality of conductive strands, the first and second conductive strip members, and the first and second layers of voltage grading layer.